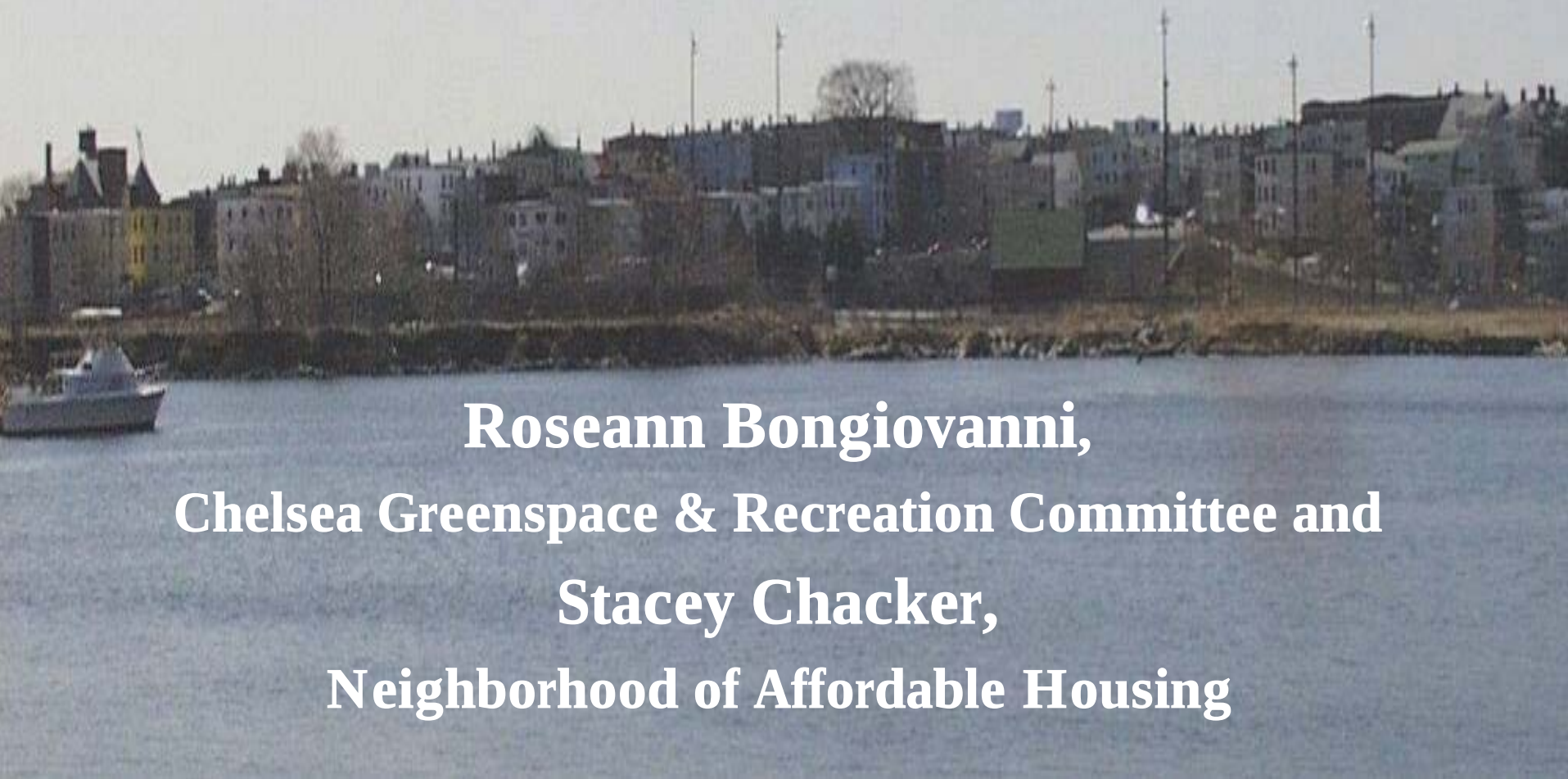
Chelsea Creek Community-Based Comparative Risk Assessment



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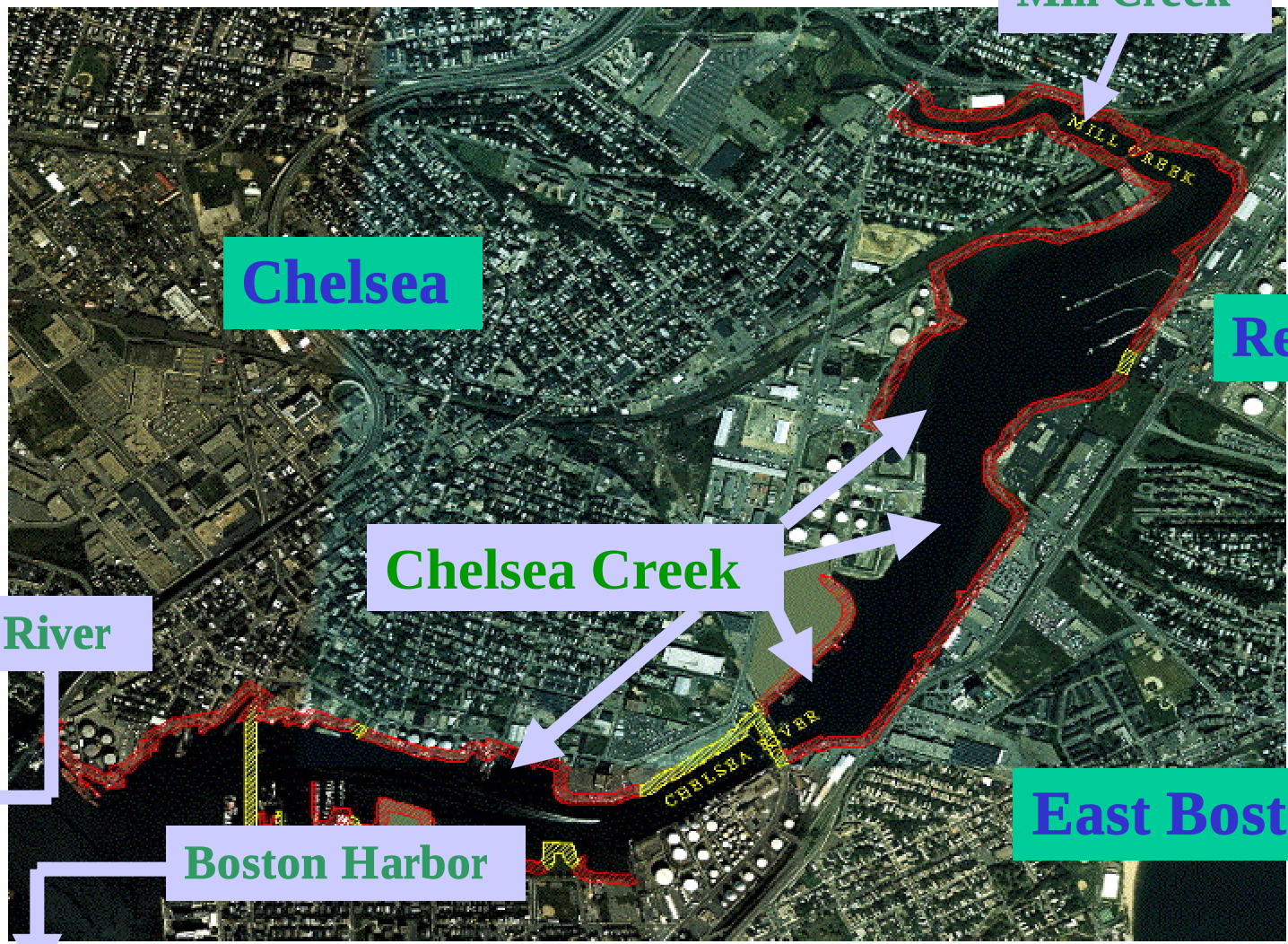
Neighborhood of Affordable Housing

Presentation Overview

- The Chelsea Creek
  - Communities of East Boston & Chelsea
- Community-Based Comparative Risk Assessment
  - Goals
  - Structure & Process
  - Water Quality Chapter Overview
  - Results
- Lessons Learned

Where is Chelsea Creek?



CCRP

CCRP

Chelsea Creek -- Conditions

Businesses on the Creek

GULF OIL TANK FARM	**56,142,030 Gallons of Petroleum**
DENNIS K. BURKE OIL TANK FARM	**11,395,944 Gallons of Petroleum**
COASTAL OIL & ASPHALT TANKS	**10,996,014 Gallons of Petroleum**
ATLANTIC OIL TANK FARM	**23,512,200 Gallons of Petroleum**
CONOCO OIL TANK FARM	**32,691,087 Gallons of Petroleum**

2500 CAR AIRPORT-RELATED PARKING LOT

Two 2000 CAR AIRPORT RENTAL LOTS

300,000 + TON ROCK SALT PILE

BOSTON HYDES & FURS TANNERY

60+ FREIGHT FORWARDING COMPANIES

BOUDREAU and PETER BANG BOATYARD

FORMER HESS OIL TANK FARM

CHANNEL FISH COMPANY

CCRP

Chelsea Creek Facts

- Stores all Logan airport's jet fuel
- Stores 70-80% of New England's heating fuel
- Stores road salt for 250 cities/town in New England
- EPA states, CC is the 2nd most polluted waterway in Massachusetts
- All Designated Port Area (DPA) except for the Urban Wild
- Most polluted tributary to Boston Harbor
- Home of the 1st Revolutionary War Battle – success for the colonists
- Water body connecting the communities of Chelsea, Revere and East Boston

Our Communities

Just North of Boston

1.8 Square Miles

Total Population 35,080

50% Latino, 40% White, 10% Other including Blacks, Asians and new refugee populations

Median Household Income is $30,161

Access points to the Creek = 0

CHELSEA

Neighborhood of Boston

5 Square Miles (though the airport encompasses much of that)

Total Population 38,413

50% White, 39% Hispanic, 8% Other including Blacks, Asians and new refugee populations

Median Household Income $31, 301

Access points to the Creek : 2

Revere

10 Square Miles

Total Population 47,283

84% White, 9% Latino, 3% Black, 4% Asian

Median Income $30,659

Access points to the Creek = 0

CCRP

Our Partnership

Chelsea Creek Action Group

CCRP

Chelsea Creek Restoration Partnership (CCRP)

OUR MISSION IS

to reclaim land along Chelsea Creek as

environmentally sound natural area;

a public-health benefit;

a vital economic engine for sustainable jobs;

a publicly accessible recreational asset; and

an educational resource.

The Chelsea Creek Community-Based Comparative Risk Assessment

Questions, But No Answers

- Residents see the environmental problems facing them each day, but do not have access to scientific information or data necessary to address (validate or negate) fears or concerns.

  - Decision makers need and use data for resources and actions.

- Needed to gather this information together and better understand the risks facing local residents in Chelsea & East Boston.

Traditional CRA's

- Final product is a list of priorities.
- Prioritization is based on "science" but is affected by policy and other biases.
- Limited or no community input.
- No clear path for future action.

Goals of the CCRA

- Take the best components of a traditional risk assessment (gathering & analyzing data on environmental problems) and add community involvement.
  - Engage local residents and provide a baseline of information on potential exposures and risks from targeted environmental, public health, and social issues in East Boston and Chelsea.
  - Serve as a tool to help residents and community organization understand environmental risks and prioritize action steps.
  - Engage and inform government agencies (federal, state & local) about the area and resource needs for the community.

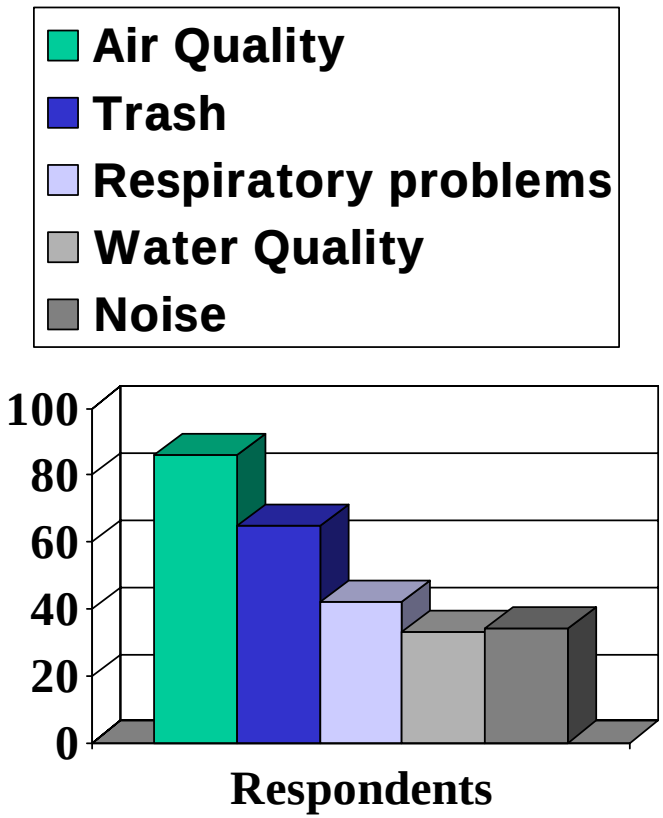
Issue Selection Process

- Listen to the community.
- Have community select issues and be involved throughout process.
  - Surveys (Over 300 residents)
  - Public Meetings (Over 100 residents)
  - Ongoing
- Gather data, information, analyze results.
- Create report that responds to community concerns and shares information on environment, public health and social issues.

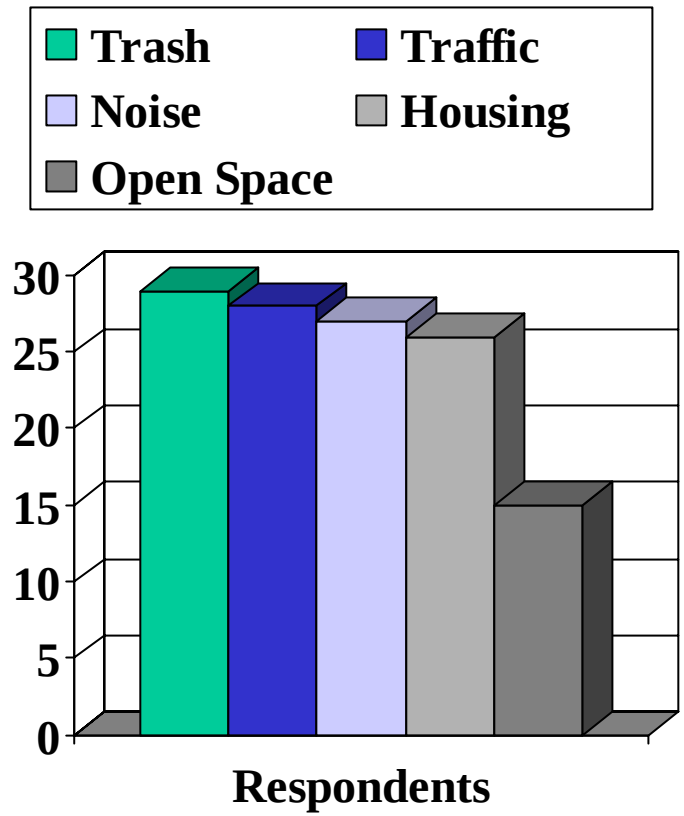
Top Survey Issues for Environment & Public Health

- What are the primary health concerns for you and your family?

- What are the biggest health concerns for people in this community?



Top Survey Issues for Quality of Life



- Besides health concerns, do you have any other concerns about living in this community?

Final Community Issues

ENVIRONMENT

- Water Quality
- Open Space
- Air Quality

PUBLIC HEALTH

- Asthma/ Respiratory Disease
- Noise

QUALITY OF LIFE

- Traffic

The Committee Structure for the CCRA

Executive Committee

- NOAH, Greenspace & Recreation Committee, EPA New England's Urban Environmental Program.
- Organized and facilitated overall process and final decisions.

Resident Advisory Committee (RAC):

- East Boston and Chelsea resident volunteers, EPA, chaired by NOAH.
- Sets priorities, provides input and guides the technical committee's work.
- 1 year commitment.

Technical Advisory Committee (TAC):

- EPA, MA EOEA, City of Boston, MA Riverways, NOAH, City Health & Human Services, Boston Public Health Commission, Urban Ecology Institute, and NOAH.
- Help retrieve information, analyze data and review products

CCRA Chapter Elements

- Overview of the issue
- Review of existing Chelsea & East Boston specific data related to the issue
- Brief analysis of existing data and potential concerns to public health and the environment
- GIS maps of available data and information for Chelsea & East Boston
- Current projects or activities in Cheslea & East Boston related to the issue
- Greatest areas of concern for residents
- Opportunities to address the problems of greatest concern
- Contact List

Water Quality

- **Overview of Water Quality in the Chelsea Creek**
  - Flows into the Boston Inner Harbor as part of the Mystic River Watershed.
  - Designated Port Area for most of the land area.
- **Water Quality Regulations**
  - Federal, State & Local: Clean Water Act (National Pollutant Discharge Elimination System Program), MA Water Quality Standards (Class SB habitat for fish and other wildlife and used for swimming, boating, and restricted shell fishing)

Water Quality

Review of Existing Water Quality Information

- Point Source Pollution
  - 9 oil companies with NPDES Permits to discharge into the Chelsea Creek.
  - 2 permits to discharge Combined Sewer Overflow Systems (CSOs) during heavy storm events.
- Non Point Source Pollution
  - Stormwater runoff and unregulated releases (spills) are main problems.
  - Since 1997, there have been at least 40 petroleum spills accounting for a total of over 100,000 gallons of oil, #2 fuel, diesel fuel, and jet fuel.

Water Quality

Analysis of Existing Water Quality Data

- In the last decade, there has been only one sampling location along the Creek used to assess and monitor the water quality in the creek.
  - Station 27 (Between Highland and Willow Streets)
- MA Water Resources Authority (MWRA) samples water at the surface and bottom of the Creek and tests for bacteria counts, dissolved oxygen, temperature, salinity, and turbidity.
- No on-going sampling program to monitor for the presence of cancer-causing polycyclic Aromatic Hydrocarbons (PAHs) or heavy metals in the Creek.
- Little information on the pollution and contamination in the sand or sediment at the bottom of the Creek.

NPDES and CSO Discharges into the Chelsea Creek

★ **Station 27 (sampling)**

CSO Discharge

▲ **NPDES-Permitted Oil Company**

Water Quality

Potential Concerns for Public Health & the Environment

- Public access to the water is restricted, but designated as Class SB (Habitat for fish and other wildlife and used for swimming, boating, and restricted shell fishing).
- Lack of data on water quality in Chelsea Creek – data gap table prepared to illustrate extent of problem.
- Contaminants of greatest concern:

Contaminant	Public Health/Environmental Concerns
Pathogens	Bacteria, viruses & other disease causing agents
Polycyclic Aromatic Hydrocarbons (PAHs)	Over 100 different chemicals during incomplete combustion of coal, gas and other materials. Some are cancer causing.
Polychlorinated Biphenyls (PCBs)	Do not degrade easily, accumulate in fish and sediment and cause range of health problems including cancer.
Heavy Metals (e.g. copper, lead, etc.)	Toxic to plants and animals, may accumulate.
Other Parameters	pH, salinity, and dissolved oxygen may affect aquatic species

Water Quality

Report Recommendations to Address Greatest Water Quality Problems

- **Select Community Actions**
  - Develop volunteer programs to supplement State sampling.
  - Work with agencies to increase oversight of NPDES permit holders to ensure compliance and verify data.
- **Select Personal Actions**
  - Limit direct contact with water, particularly after heavy rain. Wash hands with soap and water if residents contact water.
- **Select Longer Term Priorities**
  - Conduct sediment sampling and more water quality sampling with more parameters and locations.
  - Conduct biota studies to determine biodiversity and impact of pollution on living organisms.
  - Clean up 21E hazardous waste sites.
  - Create more unpaved surfaces to reduce stormwater runoff.

Community Recommendations to EPA

- **Create a Chelsea Creek Task Force, spearheaded by EPA including representatives from federal, state, local government to:**
  - Coordinate and share information/data internally and externally.
  - Hold industry accountable.
  - Promote pollution prevention.
- **Specific Task Force Reporting & Resource Requests**
  - Designated EPA contact person.
  - NPDES permit reviews, CSO releases, Cumulative Effects of air/water releases, federal enforcement actions.
  - Work with state agencies to enforce local laws.
  - Designate resources for sediment & water quality studies.
  - Inform CCAG of all enforcement actions in Chelsea & East Boston.

Key CCRA Findings

- Data on environmental and public health issues in East Boston and Chelsea is insufficient.
- Even when local data exists, the quality is unacceptable.
- Current federal, state and local regulations do not adequately protect the health of urban residents or the quality of the environment.
- Actions are needed from local, state and federal government agencies to address data gaps, information quality, and making measurable progress on issues.
- Actions are needed from local residents to hold government agencies accountable for their roles and to make improvements on issues.

Lessons Learned

- Community involvement was critical throughout the process, and added a lot of value.
- Information and data is missing on a local level – and more research is needed to better understand environment and public health risks for urban residents.
  - Some follow up projects are helping to achieve gaps (e.g. traffic counting, air quality sampling, etc.) but much more is needed.
- More technical expertise would have improved the process.
- Make sure that cumulative risk research efforts move beyond a report to identify action items and follow up.

For more information, please contact

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